

From: [Roberson, Sharon](#)
To: [Wagner, Christine](#)
Cc: [Non-responsive based on revised scope](#); [Scurato, Jesse](#); [Graybill, Eric](#)
Subject: 48815 - Validated Electronic Data for Shiloh Church Road
Date: Friday, May 08, 2020 2:22:00 PM
Attachments: [image001.png](#)
[48815 MC0B76 LTR.pdf](#)
[48815 MC0B76 DVR.pdf](#)
[48815 MC0B76 SSR.pdf](#)
[EQUIS 1 48815 MC0B76 VAL.xls](#)
[EQUIS 2 48815 MC0B76 VAL.xls](#)
[EQUIS 3 48815 MC0B76 VAL.xls](#)
[EQUIS 48815 MC0B76 VAL.xls](#)

Christine Wagner
US EPA Region 3
1650 Arch Street
Philadelphia, PA 19103-2029

Dear Christine,

Attached to this message you will find electronic files containing the validation report and validated data for the Shiloh Church Road site, Case # 48815, SDG MC0B76. The validation of this case was completed by the Region III Environmental Services Assistance Team (ESAT).

Please contact ESAT's RPO, Eric Graybill by phone at 410-305-2665 or e-mail at Graybill.Eric@epa.gov if additional assistance is needed.

TO # 0002 TDF # 0420038



Sharon Roberson |Chemistry Data Manager| 410-305-3037 | Roberson.Sharon@epa.gov
ICF | 701 Mapes Road, Fort Meade, MD 20755-5350



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Environmental Sciences Center
701 Mapes Road
Fort Meade, Maryland 20755-5350

DATE: 5/8/2020

SUBJECT: Region III Data QA Review

FROM: Eric Graybill
Region III ESAT RPO (3LS20)

A handwritten signature in blue ink, appearing to read "Eric Graybill".

TO: CHRIS WAGNER
Hazardous Site Cleanup Division (HSCD)

Attached is the data validation report for the SHILOH CHURCH RD REMOVAL ACTION site for RAS# 48815; SDG# MC0B76 completed by the Region III Environmental Services Assistance Team (ESAT) contractor, ICF International, under the direction of Region III LSASD.

If you have any questions regarding this review, please call Eric Graybill at (410)-305-2665.

Attachment

cc:

Non-responsive based on review
S Non-responsive based on review

TO: #0002 TDF: #0420038





ICF
ESAT Region 3
US Environmental Protection Agency Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Phone 410-305-3012

Date: May 7, 2020

To: ESAT Region 3 Project Officer

From: [Redacted]
Validator

[Redacted]
Reviewer

Subject: Inorganic Data Validation (S4VEM)
Shiloh Church Road
48815 MC0B76

Overview

This data package consisted of three (3) drinking water samples, including a field duplicate pair, analyzed for total metals by ICP-MS.

Analyses were performed by Pace Analytical Services, LLC (EQI) according to Contract Laboratory Program (CLP) Statement of Work (SOW) ISM02.4.

Data were validated according to the National Functional Guidelines for Inorganic Superfund Methods Data Review and applicable USEPA Region 3 modifications. Electronic validation was performed by the Electronic Data eXchange & Evaluation System (EXES). The validation report has been assigned the Superfund Data Validation Level Stage_4_Validation_Electronic_Manual (S4VEM).

The following validation narrative is an evaluation of laboratory reported data based on the electronic data package available through the EXES Data Manager dated April 7, 2020.

No drinking water sample in this SDG reported a result which exceeded the National Primary Drinking Water Regulations (NPDWR) Maximum Contaminant Levels (MCLs).

Summary

No significant data quality outliers or technical deficiencies were identified that would require rejection of sample results. Blank contamination required qualification of sample results.

Notes

Detected concentrations for target analytes less than the Contract Required Quantitation Limit (CRQL) are estimated and have been qualified "J".

Chromium (Cr) and nickel (Ni) have been detected in laboratory blanks associated with the samples in this SDG. Samples which reported concentrations for these analytes less than the CRQL have been qualified "B" as reported.

Matrix spike, laboratory duplicate, serial dilution, and Laboratory Control Sample analyses were within control limits.

Results reported for field duplicate pair MCOB76/MCOB77 were comparable (within control limits of 25 Relative Percent Difference (RPD) or \pm CRQL) for all analytes except iron (Fe) and Ni. No data were qualified based on field duplicate precision.

Sample calculation checks were performed on sample MCOB76. All calculated results had RPDs less than 5% of the reported results. No sample data were qualified.

Validation qualifiers are only applied by the validator to field samples. Qualifiers may be applied by EXES electronic validation in addition to laboratory quality control samples.

Glossary of Inorganic Data Qualifier Codes

Validation Qualifiers	In order of descending precedence. Only one of these qualifiers may apply to any result.
-----------------------	------------------------------------------------------------------------------------------

R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit
B	The result is presumed a blank contaminant. This qualifier is used for drinking water samples only.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.

Sample Summary Report

Project Name: SHILOH CHURCH ROAD SITE
Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Sample Number: LCS001

Method: Metals by ICP-MS

Matrix: Water

MA Number:

Sample Location:

pH:

Sample Date:

Sample Time:

% Moisture:

% Solids:

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Spike	40.4		ug/L	40.4		1	YES	S4VEM
Antimony	Spike	4.1		ug/L	4.1		1	YES	S4VEM
Arsenic	Spike	1.8		ug/L	1.8		1	YES	S4VEM
Barium	Spike	20.1		ug/L	20.1		1	YES	S4VEM
Beryllium	Spike	2.0		ug/L	2.0		1	YES	S4VEM
Cadmium	Spike	1.9		ug/L	1.9		1	YES	S4VEM
Calcium	Spike	1040		ug/L	1040		1	YES	S4VEM
Chromium	Spike	4.6		ug/L	4.6		1	YES	S4VEM
Cobalt	Spike	2.2		ug/L	2.2		1	YES	S4VEM
Copper	Spike	4.0		ug/L	4.0		1	YES	S4VEM
Iron	Spike	456		ug/L	456		1	YES	S4VEM
Lead	Spike	2.0		ug/L	2.0		1	YES	S4VEM
Magnesium	Spike	1070		ug/L	1070		1	YES	S4VEM
Manganese	Spike	2.1		ug/L	2.1		1	YES	S4VEM
Nickel	Spike	2.4		ug/L	2.4		1	YES	S4VEM
Potassium	Spike	1150		ug/L	1150		1	YES	S4VEM
Selenium	Spike	10.3		ug/L	10.3		1	YES	S4VEM
Silver	Spike	2.0		ug/L	2.0		1	YES	S4VEM
Sodium	Spike	1040		ug/L	1040		1	YES	S4VEM
Thallium	Spike	2.0		ug/L	2.0		1	YES	S4VEM
Vanadium	Spike	9.7		ug/L	9.7		1	YES	S4VEM
Zinc	Spike	4.2		ug/L	4.2		1	YES	S4VEM

Sample Summary Report

Project Name: SHILOH CHURCH ROAD SITE
Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Sample Number: MC0B76

Method: Metals by ICP-MS

Matrix: Water

MA Number:

Sample Location: RW-24

pH: 1.0

Sample Date: 03/18/2020

Sample Time: 10:45:00

% Moisture:

% Solids:

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	20.0	U	ug/L	20.0	U	1	YES	S4VEM
Antimony	Target	2.0	U	ug/L	2.0	U	1	YES	S4VEM
Arsenic	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Barium	Target	39.8		ug/L	39.8		1	YES	S4VEM
Beryllium	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Cadmium	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Calcium	Target	10400		ug/L	10400		1	YES	S4VEM
Chromium	Target	0.91	JB	ug/L	0.91	J	1	YES	S4VEM
Cobalt	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Copper	Target	78.6		ug/L	78.6		1	YES	S4VEM
Iron	Target	504		ug/L	504		1	YES	S4VEM
Lead	Target	3.1		ug/L	3.1		1	YES	S4VEM
Magnesium	Target	2520		ug/L	2520		1	YES	S4VEM
Manganese	Target	2.2		ug/L	2.2		1	YES	S4VEM
Nickel	Target	5.5		ug/L	5.5		1	YES	S4VEM
Potassium	Target	1930		ug/L	1930		1	YES	S4VEM
Selenium	Target	5.0	U	ug/L	5.0	U	1	YES	S4VEM
Silver	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Sodium	Target	8380		ug/L	8380		1	YES	S4VEM
Thallium	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Vanadium	Target	2.0	J	ug/L	2.0	J	1	YES	S4VEM
Zinc	Target	249		ug/L	249		1	YES	S4VEM

Sample Summary Report

Project Name: SHILOH CHURCH ROAD SITE
Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Sample Number: MC0B76D Method: Metals by ICP-MS Matrix: Water MA Number:
Sample Location: pH: 1.0 Sample Date: 03/18/2020 Sample Time: 10:45:00
% Moisture: % Solids:

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	20.0	U	ug/L	20.0	U	1	YES	NV
Antimony	Target	2.0	U	ug/L	2.0	U	1	YES	NV
Arsenic	Target	1.0	U	ug/L	1.0	U	1	YES	NV
Barium	Target	38.9		ug/L	38.9		1	YES	NV
Beryllium	Target	1.0	U	ug/L	1.0	U	1	YES	NV
Cadmium	Target	0.11	J	ug/L	0.11	J	1	YES	NV
Calcium	Target	10300		ug/L	10300		1	YES	NV
Chromium	Target	0.94	J	ug/L	0.94	J	1	YES	NV
Cobalt	Target	1.0	U	ug/L	1.0	U	1	YES	NV
Copper	Target	78.4		ug/L	78.4		1	YES	NV
Iron	Target	497		ug/L	497		1	YES	NV
Lead	Target	3.0		ug/L	3.0		1	YES	NV
Magnesium	Target	2440		ug/L	2440		1	YES	NV
Manganese	Target	2.1		ug/L	2.1		1	YES	NV
Nickel	Target	5.4		ug/L	5.4		1	YES	NV
Potassium	Target	1850		ug/L	1850		1	YES	NV
Selenium	Target	5.0	U	ug/L	5.0	U	1	YES	NV
Silver	Target	1.0	U	ug/L	1.0	U	1	YES	NV
Sodium	Target	8220		ug/L	8220		1	YES	NV
Thallium	Target	1.0	U	ug/L	1.0	U	1	YES	NV
Vanadium	Target	5.0	U	ug/L	5.0	U	1	YES	NV
Zinc	Target	246		ug/L	246		1	YES	NV

Sample Summary Report

Project Name: SHILOH CHURCH ROAD SITE
Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Sample Number: MC0B76L	Method: Metals by ICP-MS	Matrix: Water	MA Number:
Sample Location:	pH: 1.0	Sample Date:	Sample Time:
% Moisture:		% Solids:	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	100	U	ug/L	100	U	5	YES	NV
Antimony	Target	10.0	U	ug/L	10.0	U	5	YES	NV
Arsenic	Target	5.0	U	ug/L	5.0	U	5	YES	NV
Barium	Target	38.4	J	ug/L	38.4	J	5	YES	NV
Beryllium	Target	5.0	U	ug/L	5.0	U	5	YES	NV
Cadmium	Target	5.0	U	ug/L	5.0	U	5	YES	NV
Calcium	Target	10500		ug/L	10500		5	YES	NV
Chromium	Target	10.0	U	ug/L	10.0	U	5	YES	NV
Cobalt	Target	5.0	U	ug/L	5.0	U	5	YES	NV
Copper	Target	78.2		ug/L	78.2		5	YES	NV
Iron	Target	497	J	ug/L	497	J	5	YES	NV
Lead	Target	3.1	J	ug/L	3.1	J	5	YES	NV
Magnesium	Target	2620		ug/L	2620		5	YES	NV
Manganese	Target	2.1	J	ug/L	2.1	J	5	YES	NV
Nickel	Target	5.3		ug/L	5.3		5	YES	NV
Potassium	Target	1980	J	ug/L	1980	J	5	YES	NV
Selenium	Target	25.0	U	ug/L	25.0	U	5	YES	NV
Silver	Target	5.0	U	ug/L	5.0	U	5	YES	NV
Sodium	Target	8790		ug/L	8790		5	YES	NV
Thallium	Target	5.0	U	ug/L	5.0	U	5	YES	NV
Vanadium	Target	25.0	U	ug/L	25.0	U	5	YES	NV
Zinc	Target	249		ug/L	249		5	YES	NV

Sample Summary Report

Project Name: SHILOH CHURCH ROAD SITE
Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Sample Number: MC0B76S	Method: Metals by ICP-MS	Matrix: Water	MA Number:
Sample Location:	pH: 1.0	Sample Date: 03/18/2020	Sample Time: 10:45:00
% Moisture:		% Solids:	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Antimony	Spike	103		ug/L	103		1	YES	NV
Arsenic	Spike	40.0		ug/L	40.0		1	YES	NV
Barium	Spike	2140		ug/L	2140		1	YES	NV
Beryllium	Spike	45.4		ug/L	45.4		1	YES	NV
Cadmium	Spike	50.4		ug/L	50.4		1	YES	NV
Chromium	Spike	214		ug/L	214		1	YES	NV
Cobalt	Spike	564		ug/L	564		1	YES	NV
Copper	Spike	347		ug/L	347		1	YES	NV
Lead	Spike	23.6		ug/L	23.6		1	YES	NV
Manganese	Spike	522		ug/L	522		1	YES	NV
Nickel	Spike	542		ug/L	542		1	YES	NV
Selenium	Spike	104		ug/L	104		1	YES	NV
Silver	Spike	51.5		ug/L	51.5		1	YES	NV
Thallium	Spike	51.9		ug/L	51.9		1	YES	NV
Vanadium	Spike	537		ug/L	537		1	YES	NV
Zinc	Spike	789		ug/L	789		1	YES	NV

Sample Summary Report

Project Name: SHILOH CHURCH ROAD SITE
Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Sample Number: MC0B77	Method: Metals by ICP-MS	Matrix: Water	MA Number:
Sample Location: RW-24	pH: 1.0	Sample Date: 03/18/2020	Sample Time: 10:50:00
% Moisture:		% Solids:	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	20.0	U	ug/L	20.0	U	1	YES	S4VEM
Antimony	Target	2.0	U	ug/L	2.0	U	1	YES	S4VEM
Arsenic	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Barium	Target	39.5		ug/L	39.5		1	YES	S4VEM
Beryllium	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Cadmium	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Calcium	Target	10600		ug/L	10600		1	YES	S4VEM
Chromium	Target	0.90	JB	ug/L	0.90	J	1	YES	S4VEM
Cobalt	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Copper	Target	75.4		ug/L	75.4		1	YES	S4VEM
Iron	Target	300		ug/L	300		1	YES	S4VEM
Lead	Target	2.6		ug/L	2.6		1	YES	S4VEM
Magnesium	Target	2490		ug/L	2490		1	YES	S4VEM
Manganese	Target	2.1		ug/L	2.1		1	YES	S4VEM
Nickel	Target	3.6		ug/L	3.6		1	YES	S4VEM
Potassium	Target	1900		ug/L	1900		1	YES	S4VEM
Selenium	Target	5.0	U	ug/L	5.0	U	1	YES	S4VEM
Silver	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Sodium	Target	8280		ug/L	8280		1	YES	S4VEM
Thallium	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Vanadium	Target	5.0	U	ug/L	5.0	U	1	YES	S4VEM
Zinc	Target	259		ug/L	259		1	YES	S4VEM

Sample Summary Report

Project Name: SHILOH CHURCH ROAD SITE
Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Sample Number: MC0B76 Method: Metals by ICP-MS Matrix: Water MA Number:
Sample Location: RW-25 pH: 1.0 Sample Date: 03/18/2020 Sample Time: 11:10:00
% Moisture: % Solids:

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	13.4	J	ug/L	13.4	J	1	YES	S4VEM
Antimony	Target	2.0	U	ug/L	2.0	U	1	YES	S4VEM
Arsenic	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Barium	Target	52.9		ug/L	52.9		1	YES	S4VEM
Beryllium	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Cadmium	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Calcium	Target	9790		ug/L	9790		1	YES	S4VEM
Chromium	Target	1.1	JB	ug/L	1.1	J	1	YES	S4VEM
Cobalt	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Copper	Target	5.7		ug/L	5.7		1	YES	S4VEM
Iron	Target	776		ug/L	776		1	YES	S4VEM
Lead	Target	1.6		ug/L	1.6		1	YES	S4VEM
Magnesium	Target	3590		ug/L	3590		1	YES	S4VEM
Manganese	Target	5.0		ug/L	5.0		1	YES	S4VEM
Nickel	Target	0.55	JB	ug/L	0.55	J	1	YES	S4VEM
Potassium	Target	1640		ug/L	1640		1	YES	S4VEM
Selenium	Target	5.0	U	ug/L	5.0	U	1	YES	S4VEM
Silver	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Sodium	Target	8500		ug/L	8500		1	YES	S4VEM
Thallium	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Vanadium	Target	5.0	U	ug/L	5.0	U	1	YES	S4VEM
Zinc	Target	24.6		ug/L	24.6		1	YES	S4VEM

Sample Summary Report

Project Name: SHILOH CHURCH ROAD SITE
Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Sample Number: PBW001	Method: Metals by ICP-MS	Matrix: Water	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids:	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	20.0	U	ug/L	20.0	U	1	YES	S4VEM
Antimony	Target	2.0	U	ug/L	2.0	U	1	YES	S4VEM
Arsenic	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Barium	Target	10.0	U	ug/L	10.0	U	1	YES	S4VEM
Beryllium	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Cadmium	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Calcium	Target	500	U	ug/L	500	U	1	YES	S4VEM
Chromium	Target	0.53	J	ug/L	0.53	J	1	YES	S4VEM
Cobalt	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Copper	Target	0.92	J	ug/L	0.92	J	1	YES	S4VEM
Iron	Target	200	U	ug/L	200	U	1	YES	S4VEM
Lead	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Magnesium	Target	500	U	ug/L	500	U	1	YES	S4VEM
Manganese	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Nickel	Target	0.19	J	ug/L	0.19	J	1	YES	S4VEM
Potassium	Target	500	U	ug/L	500	U	1	YES	S4VEM
Selenium	Target	5.0	U	ug/L	5.0	U	1	YES	S4VEM
Silver	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Sodium	Target	500	U	ug/L	500	U	1	YES	S4VEM
Thallium	Target	1.0	U	ug/L	1.0	U	1	YES	S4VEM
Vanadium	Target	5.0	U	ug/L	5.0	U	1	YES	S4VEM
Zinc	Target	2.0	U	ug/L	2.0	U	1	YES	S4VEM

Sample Summary Report

Project Name: SHILOH CHURCH ROAD SITE
Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Pace Analytical Services, LLC

SDG Narrative

Date: 04/07/2020

Case 48815

SDG MC0B76

SOW ISM02.4

Contract Number: EPW14035

<p>ICP-AES Thermo Sci ICAP 7600 (ICP5) Software: Qtegra Version: 2.8.2944.202 Operating System: Windows 7</p> <p>Thermo Sci ICAP 6500 (ICP4) Software: Qtegra Version: 2.8.2944.202 Operating System: Windows 7</p> <p>ICP-MS Thermo Elemental X-2 (ICPMS2) Software: PlasmaLab Version: 2.6.2.337 Operating System: Windows 7</p> <p>MERCURY Leeman Labs Hydra II AA (Hg6) Software: Envoy Version: 2.2.3 Operating System: Windows 7</p> <p>Leeman Labs Hydra II (Hg4) Software: Envoy 2.0 sp.0 Version: Rev 6.1 Operating System: Windows 7</p>	<p>Water sample: Final concentration (ug/L) = $C * DF$</p> <p>Soil sample: Final concentration (mg/Kg) = $\frac{C * V * DF}{W * S}$</p> <p>Where, C = the instrument readout in ug/L V = final sample volume in liter W = the wet sample weight (g) S = %solids/100 DF = Dilution Factor</p>
<p>Cyanide Lachat QuickChem FIA+ Software: Omnion Version: 3.0.220.06 Operating System: Windows XP</p>	<p>Water sample: Final concentration (ug/L) = $\frac{A * D * F}{B}$</p> <p>Soil sample: Final concentration (mg/Kg) = $\frac{A * D * F}{B * E}$</p> <p>Where, A = Concentration from regression analysis curve (ug/L) B = Volume of original sample (Water) or wet weight of original sample (Soil) D = Dilution factor E = %solids/100 F = Sample receiving solution volume (0.0060L)</p>

Sample Receiving

The three (3) water samples in this SDG were received in a sealed shipping container on March 19, 2020 with a temperature of 5.0°C.

For a cross reference of laboratory ID to EPA Sample Numbers, please see the SDG Cover Page on page 3 of this CSF file.

The laboratory is in the process of revising the laboratory name on all standard logs, digestion logs, percent solids logs, ICOCs, digestate ICOCs, etc. Some of these documents will still have "Shealy Environmental Services, Inc." rather than "Pace Analytical Services, LLC".

Excerpt from email dated 03/19/2020:

Issue 1: The laboratory has received three water ICP-MS 11+ Metals samples and is scheduled for seven water ICP-MS 11+ Metals samples under this Case, and would like to confirm if this Case is complete per the COC. The shipping end date for the Case is 3/20/2020.

Resolution 1: Per Region 3, no additional samples will ship as the Case is now complete. Please note the issue in the SDG Narrative and proceed with the analysis of the samples.

Issue 2: ICP-MS 11+ Metals samples under this Case are scheduled for a 21 day TAT; however, the COC the laboratory received for this Case lists a 14 day TAT.

Resolution 2: In accordance with previous direction from Region 3, the laboratory will note the issue in the SDG Narrative and proceed with the analysis of the samples as indicated on the Scheduling Notification Form. The resolution will be applied to all COCs received for this Case that list information that does not match the Scheduling Notification Form.

Target Analyte



The target analytes for ICPMS are listed below:

Target Analytes	ICP-MS
Aluminum	Yes
Antimony	Yes
Arsenic	Yes
Barium	Yes
Beryllium	Yes
Cadmium	Yes
Calcium	Yes
Chromium	Yes
Cobalt	Yes
Copper	Yes
Iron	Yes
Lead	Yes
Magnesium	Yes
Manganese	Yes
Nickel	Yes
Potassium	Yes
Selenium	Yes
Silver	Yes
Sodium	Yes
Thallium	Yes
Vanadium	Yes
Zinc	Yes

ICP-MS

The MDL study was performed following procedure revision 2.

ESAT DATA VALIDATION EVALUATION CHECKLIST
Contract # EP-W-13-023

TDF #: 0420038	Revision: 0	Case #: 48815	SDG: MC0B76
Site Name: Shiloh Church Road			
Parameter(s): ICP-MS			
Method(s): ISM02.4			
Laboratory: EQI			
Reviewer: 		Date Submitted to EPA: 5/8/2020	
EPA RPM/OSC: Christine Wagner		Number of hours spent on review: 4	
cc:  (WESTON)		Number of Samples/Aliquots: 3 / 3	
Validation Level/Stage: M3/S4VEM		EDD: YES	

<u>CRITERIA</u>	<u>YES</u>	<u>NO</u>	<u>COMMENTS</u>
Format according to Region III protocol	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Clarity of report	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Qualifiers applied correctly	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Consistency between narrative and data summary form(s)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Error-free transcription	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

EFFICIENCY OF CONTRACTOR

Approval recommended for current submission	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Time spent on review is reasonable	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Technical Evaluation 3.7

 Non-responsive based on revised scope

<u>ESD OVERSIGHT DATES</u>	<u>TPO</u>	<u>Oversight</u>	<u>ESAT</u>
Received at EPA	<u>5/8/2020</u>		
Oversight assigned	<u>5/8/2020</u>		
Oversight received		<u>5/8/2020</u>	
Oversight completed		<u>5/8/2020</u>	
Feedback given	<u>5/8/2020</u>		
Mailed to RPM			

Data Validation Checklist - Inorganics

TDF #: 0420038	Case/DAS #: 48815
Site Name: Shiloh Church Road	SDG #: MC0B76
Program: <input checked="" type="checkbox"/> CLP <input type="checkbox"/> Tier IV <input type="checkbox"/> Other	DV Type: <input type="checkbox"/> Org <input checked="" type="checkbox"/> Ino <input type="checkbox"/> HiRes <input type="checkbox"/> Rad <input type="checkbox"/> Asb
Parameter: ICP-MS	DV Regional Level: IM2
SOW/Method: ISM02.4	DV Stage: S4VEM
Laboratory Code: EQI	Reviewer: Non-responsive based on revised scope

Due Date: 5/4/2020

General

CRITERIA	CHECK	COMMENTS
EPA Oversight Checklist		
TDF #	<input checked="" type="checkbox"/>	
Case #	<input checked="" type="checkbox"/>	
SDG #	<input checked="" type="checkbox"/>	
Site Name	<input checked="" type="checkbox"/>	
Laboratory	<input checked="" type="checkbox"/>	
EPA OSC/RPM	<input checked="" type="checkbox"/>	
CC: (Contractors)	<input checked="" type="checkbox"/>	
Validation Level/Stage	<input checked="" type="checkbox"/>	
Parameter	<input checked="" type="checkbox"/>	
Number of Samples/Aliquots	<input checked="" type="checkbox"/>	
Narrative		Fixed spacing and punctuation errors
Report Header	<input checked="" type="checkbox"/>	
Report Footer	<input checked="" type="checkbox"/>	
Overview		
Laboratory	<input checked="" type="checkbox"/>	
Analytical method	<input checked="" type="checkbox"/>	
Analytical services program	<input checked="" type="checkbox"/>	
NFG reference	<input checked="" type="checkbox"/>	
Validation level	<input checked="" type="checkbox"/>	
Data package receipt date	<input checked="" type="checkbox"/>	
Criteria		
Qualifier list	<input checked="" type="checkbox"/>	
Appendix A		
Regional COC/ARF	<input checked="" type="checkbox"/>	
Appendix B		
Laboratory narrative/Excerpts	<input checked="" type="checkbox"/>	
Appendix C		
EXES report/Supplemental	<input checked="" type="checkbox"/>	

General Comments:

Reviewed By: Non-responsive based on revised scope Date: 5/7/20

Data Validation Checklist - Inorganics

TDF #: 0420038	Case/DAS #: 48815
Site Name: Shiloh Church Road	SDG #: MC0B76
Program: <input checked="" type="checkbox"/> CLP <input type="checkbox"/> Tier IV <input type="checkbox"/> Other	DV Type: <input type="checkbox"/> Org <input checked="" type="checkbox"/> Ino <input type="checkbox"/> HiRes <input type="checkbox"/> Rad <input type="checkbox"/> Asb
Parameter: ICP-MS	DV Regional Level: IM2
SOW/Method: ISM02.4	DV Stage: S4VEM
Laboratory Code: EQI	Reviewer: Non-Response based on review

Technical

Section	Check	Comments
Overview	<input checked="" type="checkbox"/>	
Matrix and # of samples	<input checked="" type="checkbox"/>	
Field QC samples	<input checked="" type="checkbox"/>	
Summary	<input checked="" type="checkbox"/>	
Major problems	<input checked="" type="checkbox"/>	
Minor problems	<input checked="" type="checkbox"/>	
Notes	<input checked="" type="checkbox"/>	
Compounds below CRQL	<input checked="" type="checkbox"/>	
Blank contaminants	<input checked="" type="checkbox"/>	
Field Duplicates	<input type="checkbox"/>	
Field/Rinsate Blanks	<input checked="" type="checkbox"/>	
Dilutions	<input checked="" type="checkbox"/>	
Calculation	<input checked="" type="checkbox"/>	
SSRs/Form Is	<input checked="" type="checkbox"/>	
Non-Detect RLs	<input checked="" type="checkbox"/>	
EDD	<input checked="" type="checkbox"/>	

DV Item	Check	Qualifier Applied	Comments
Preservation/Holding Time	<input checked="" type="checkbox"/>		
Instrument Performance Check	<input checked="" type="checkbox"/>		
Calibration	<input checked="" type="checkbox"/>		
Blanks	<input checked="" type="checkbox"/>		
Interference Check Sample	<input checked="" type="checkbox"/>		
Serial Dilution	<input checked="" type="checkbox"/>		
Lab Duplicate	<input checked="" type="checkbox"/>		
MS/MSDs/PDS	<input checked="" type="checkbox"/>		
LCS/LCSDs	<input checked="" type="checkbox"/>		
Internal Standards	<input type="checkbox"/>		
Other	<input type="checkbox"/>		

General Comments:

Data Validation Checklist - Inorganics

TDF #: 0420038	Case/DAS #: 48815
Site Name: Shiloh Church Road	SDG #: MC0B76
Program: <input checked="" type="checkbox"/> CLP <input type="checkbox"/> Tier IV <input type="checkbox"/> Other	DV Type: <input type="checkbox"/> Org <input checked="" type="checkbox"/> Ino <input type="checkbox"/> HiRes <input type="checkbox"/> Rad <input type="checkbox"/> Asb
Parameter: ICP-MS	DV Regional Level: IM2
SOW/Method: ISM02.4	DV Stage: S4VEM
Laboratory Code: EQI	Reviewer: Non-responsive based on revised ap

Reviewed By: Non-responsive based on revised ap Date: __5/7/20__

Data Validation Report

Page 1

Data Review Results

Tue, 7
Apr
2020
16:48:34

Project Name: SHILOH CHURCH ROAD SITE Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Submission Group Id: 31780327

Organization: EPA Region 3

SOW: ISM02.4

HoldingTimes_Preservation

NONE FOUND

Accurate

Data Validation Report

Page 2

Data Review Results

Tue, 7
Apr
2020
16:48:34

Project Name: SHILOH CHURCH ROAD SITE Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Submission Group Id: 31780327

Organization: EPA Region 3

SOW: ISM02.4

TUNE

NONE FOUND

Accurate

Data Validation Report

Page 3

Data Review Results

Tue, 7
Apr
2020
16:48:34

Project Name: SHILOH CHURCH ROAD SITE Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Submission Group Id: 31780327

Organization: EPA Region 3

SOW: ISM02.4

InitialCalibration

NONE FOUND

Accurate

Data Validation Report

Page 4

Data Review Results

Tue, 7
Apr
2020
16:48:34

Project Name: SHILOH CHURCH ROAD SITE Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Submission Group Id: 31780327

Organization: EPA Region 3

SOW: ISM02.4

ContinuingCalibrationVerification

NONE FOUND

Accurate

Data Validation Report

Page 5

Data Review Results

Tue, 7
Apr
2020
16:48:34

Project Name: SHILOH CHURCH ROAD SITE Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Submission Group Id: 31780327

Organization: EPA Region 3

SOW: ISM02.4

InitialCalibrationVerification

NONE FOUND

Accurate

Data Review Results

Tue, 7
Apr
2020
16:48:34

Project Name: SHILOH CHURCH ROAD SITE Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Submission Group Id: 31780327

Organization: EPA Region 3

SOW: ISM02.4

Blanks

Method - Metals by ICP-MS

Test Name: EXES-478

Defect Message: The following samples have analyte results greater than CRQLs. The associated ICB analyte results are less than or equal to CRQLs. Use Professional Judgement to qualify detects. **Data not qualified due to ICBs**

Associated Samples: LCS001, MC0B76S

Defective Analyte	Defective Samples/Analyses
Antimony	LCS001, MC0B76S

Test Name: EXES-479

Defect Message: The following samples have analyte results greater than CRQLs. The associated CCB analyte results are less than or equal to CRQLs. Use Professional Judgement to qualify detects. **No Impact, Lab QC not qualified by validator.**

Associated Samples: LCS001, MC0B76S

Defective Analyte	Defective Samples/Analyses
Antimony	LCS001, MC0B76S

Test Name: EXES-506

Defect Message: The following samples have analyte results less than or equal to CRQLs. The associated PB analyte results are less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs. **– drinking water samples qualified B as reported**

Associated Samples: MC0B76, MC0B77, MC0B78

Defective Analyte	Defective Samples/Analyses
Chromium	MC0B76, MC0B77, MC0B78
Nickel	MC0B78

Data Review Results

Tue, 7
Apr
2020
16:48:34

Project Name: SHILOH CHURCH ROAD SITE Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Submission Group Id: 31780327

Organization: EPA Region 3

SOW: ISM02.4

Test Name: EXES-508**Defect Message: The following samples have analyte results greater than CRQLs. The associated PB analyte results are less than or equal to CRQLs. Use Professional Judgement to qualify detects. **No Impact******Associated Samples: MC0B76, MC0B77, MC0B78**

Defective Analyte	Defective Samples/Analyses
Copper	MC0B76, MC0B77, MC0B78
Nickel	MC0B76, MC0B77

Data Validation Report

Page 8

Data Review Results

Tue, 7
Apr
2020
16:48:34

Project Name: SHILOH CHURCH ROAD SITE Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Submission Group Id: 31780327

Organization: EPA Region 3

SOW: ISM02.4

InterferenceCheckSample

NONE FOUND

Accurate

Data Validation Report

Page 9

Data Review Results

Tue, 7
Apr
2020
16:48:34

Project Name: SHILOH CHURCH ROAD SITE Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Submission Group Id: 31780327

Organization: EPA Region 3

SOW: ISM02.4

LaboratoryControlSample

NONE FOUND

Accurate

Data Validation Report

Page 10

Data Review Results

Tue, 7
Apr
2020
16:48:34

Project Name: SHILOH CHURCH ROAD SITE Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Submission Group Id: 31780327

Organization: EPA Region 3

SOW: ISM02.4

MatrixSpikes

NONE FOUND

Accurate

Data Validation Report

Page 11

Data Review Results

Tue, 7
Apr
2020
16:48:34

Project Name: SHILOH CHURCH ROAD SITE Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Submission Group Id: 31780327

Organization: EPA Region 3

SOW: ISM02.4

SerialDilution

NONE FOUND

Accurate

Data Validation Report

Page 12

Data Review Results

Tue, 7
Apr
2020
16:48:34

Project Name: SHILOH CHURCH ROAD SITE Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Submission Group Id: 31780327

Organization: EPA Region 3

SOW: ISM02.4

InternalStandard

NONE FOUND

Accurate

Data Review Results

Tue, 7
Apr
2020
16:48:34

Project Name: SHILOH CHURCH ROAD SITE Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Submission Group Id: 31780327

Organization: EPA Region 3

SOW: ISM02.4

TargetAnalyteQuantitation

Method - Metals by ICP-MS

Test Name: EXES-790

Defect Message: The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Associated Samples: MC0B76, MC0B76D, MC0B76L, MC0B77, MC0B78, PBW001

Defective Analyte	Defective Samples/Analyses
Aluminum	MC0B78
Barium	MC0B76L
Cadmium	MC0B76D
Chromium	MC0B76, MC0B76D, MC0B77, MC0B78, PBW001
Copper	PBW001
Iron	MC0B76L
Lead	MC0B76L
Manganese	MC0B76L
Nickel	MC0B78, PBW001
Potassium	MC0B76L
Vanadium	MC0B76

Accurate

Data Validation Report

Page 14

Data Review Results

Tue, 7
Apr
2020
16:48:34

Project Name: SHILOH CHURCH ROAD SITE Project

GroupID: 48815/EPW14035/MC0B76

Lab Name: Pace Analytical Services, LLC

Submission Group Id: 31780327

Organization: EPA Region 3

SOW: ISM02.4

Duplicates

NONE FOUND

Accurate

Data Validation Report
Data Review Results

Project Name: SHILOH CHURCH ROAD SITE Project	GroupID: 48815/EPW14035/MC0B76	Lab Name: Pace Analytical Services, LLC
Submission Group Id: 31780327	Organization: EPA Region 3	SOW: ISM02.4

SampleAnalysis

NONE FOUND

Accurate